

Message Text

CONFIDENTIAL

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ACTION OES-09

INFO OCT-01 EUR-12 ISO-00 SOE-02 AID-05 CEA-01 CIAE-00
COME-00 DODE-00 EB-08 DOE-15 H-01 INR-10 INT-05
L-03 NSAE-00 NSC-05 OMB-01 PM-05 ICA-11 SP-02
SS-15 STR-07 TRSE-00 ACDA-12 PA-01 /131 W
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FM AMEMBASSY OTTAWA
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C O N F I D E N T I A L OTTAWA 03399

DEPT. FOR OES/NET; EUR/CAN; PASS DOE/VANDERRYN

E.O. 11652: GDS
TAGS: TECH, ENRG
SUBJECT: DESTRUCTION OF WIND POWER GENERATOR AT MAGDALLENS

1. AN ARTICLE IN THE TORONTO "GLOBE AND MAIL," ON JULY 7, 1978, REPORTED THAT THE LARGE (200 KWE) EXPERIMENTAL WIND-MILL ON AMHERST ISLAND, OF THE MAGDELLEN GROUP IN THE GULF OF ST. LAWRENCE, WAS DESTROYED YESTERDAY BY HIGH WINDS.
2. SCICOUNS DISCUSSED THE ACCIDENT WITH ONE OF THE SCIENTISTS AT THE NATIONAL RESEARCH COUNCIL OF CANADA (NRC) THE ORGANIZATION WHICH DEVELOPED THE DESIGN.
3. THE FOLLOWING INFORMATION WAS GIVEN TO THE EMBOFF ON A CONFIDENTIAL BASIS, SINCE THE NRC HAS NOT YET HAD TIME FOR A THOROUGH INVESTIGATION OF THE ACCIDENT AND THE RESULTS ARE PRELIMINARY:
 - A. THE PLANT WAS SHUTDOWN FOR MAINTENANCE, BECAUSE OF MINOR VIBRATIONS BEING DETECTED IN THE GEAR BOX.
 - B. THE DISC BRAKE AND LOCKING MECHANISM WERE NOT EN-CONFIDENTIAL

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GAGED (AS NORMALLY WOULD BE THE CASE DURING SHUT-DOWN) AND THERE WAS NO LOAD ON THE ROTOR, AS IT WAS DISCONNECTED FROM THE GENERATOR.

- C. UNDER NORMAL CONDITIONS OF LOAD, OR WITH THE BRAKING MECHANISM ENGAGED THE WINDMILL IS NOT SELF-STARTING. HOWEVER, WITHOUT THESE LOADS THE WINDMILL DID START-UP AND

REACHED A SPEED OF ABOUT 75 RPM (NORMAL OPERATION IS 38 RPM; DESIGN SPECIFICATIONS ARE 55 RPM).

-- D. SPOILERS ON THE BLADES, WHICH SHOULD COME INTO EFFECT WHEN NORMAL SPEEDS ARE EXCEEDED, APPARENTLY CLOSED DOWN AND DIDN'T FUNCTION EFFECTIVELY IN LIMITING THE SPEED (THESE WILL BE STUDIED IN THE INVESTIGATION TO FOLLOW).

-- E. AT THE EXCESSIVE SPEED ONE (OR MORE) OF THE GUY WIRES BROKE AND THE WINDMILL TOPPLED OVER. THE BASE AND GENERATING EQUIPMENT WERE NOT DAMAGED.

-- F. PRIOR TO THE ACCIDENT, THE UNIT HAD BEEN OPERATING VERY WELL AND HAD GENERATED PEAK CAPACITIES OF 240 KWE (IN EXCESS OF THE 200 KW DESIGN).

-- G. THE PROJECT COST WAS ABOUT \$1.5 MILLION, WITH THE COST OF THE WINDMILL ITSELF BEING \$290,000. PRELIMINARY ESTIMATES OF THE COST OF REPAIR RANGE FROM \$150,000 TO \$250,000. SINCE THE COST OF THE INSTALLATION WAS SHARED BETWEEN NRC AND QUEBEC HYDRO, IT WILL BE NECESSARY FOR THEM TO GET TOGETHER ON WHAT NEXT STEPS ARE TO BE TAKEN AND WHO IS TO PAY FOR THEM.

4. COMMENTS: FROM THE PRELIMINARY FINDINGS IT APPEARS THAT IT WAS A COMBINATION OF ERRORS THAT CAUSED THE ACCIDENT.
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DENT. NO ONE IS BEING BLAMED AT PRESENT, AND IT WILL TAKE MORE INVESTIGATION TO PIN DOWN THE CAUSE AND PRESCRIBE THE "FIX." ENDERS

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Message Attributes

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